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RESPONSE UNDER 37 C.F.R. § 1.116

EXPEDITED PROCEDURE

EXAMINING GROUP 2800

First Named
Inventor : Evren Eryurek

Appln. No.: 09/852,102

Filed : May 9, 2001

For : FLOW DIAGNOSTIC SYSTEM

Docket No.: R11.12-0749

Group Art Unit: 2857

Examiner: J. West

RESPONSE AFTER FINAL

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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PATENT ATTORNEY

Sir:

This is in response to the Office Action mailed on October 30, 2003 in which all pending claims 1-42 were rejected. With this response, claims 1-42 are presented for reconsideration and favorable action.

Applicant notes that a related application has recently issued as U.S. Patent No. 6,654,697. For the Examiner's reference, copies of the Office Actions dated October 19, 2001, April 10, 2002, November 5, 2002 and April 15, 2003 from that application are submitted herewith at Appendix A.

Pending claims 1, 28 and 29 of the present application are independent claims. The primary rejection against these claims is based upon Lowe in view of Freeman and Shanahan. In addition, UK patent 2,342,453 to Keech is used in the rejection against independent claim 1.

The Lowe reference describes comparing a statistical variance to a threshold to determine if an impulse line is blocked. As noted by the Examiner, Lowe does not describe the use

of a moving average or the use of historical data.

Applicant further notes that the Examiner at page 4, lines 12-13, states that Lowe fails to teach, "a method for calibrating the sensor . . .". However, the pending independent claims are not directed to the calibration of a sensor. Instead, these claims are directed to a diagnostic system.

Next, Freeman is relied upon to show a "moving average". Applicant notes that Freeman is directed to detecting and controlling disturbances in the flow through a compressor. Flow sensors 102A and 102B shown in Figure 13 of Freeman are used to sense flow through the compressor. The average used by Freeman is for detecting variations in the flow. Freeman does not describe the use of impulse piping as set forth in the pending claims. Further, Freeman does not describe diagnosing impulse lines and/or a primary element. There is no suggestion that any of the teachings of Freeman could be applied to a diagnostic system and therefore the combination of Freeman and with Lowe is improper and the rejection should be withdrawn.

Even if one were to combine Freeman with Lowe, the resulting combination would not be in accordance with the present invention. The resulting device might comprise a system for controlling operation of a compressor in which diagnostics are performed using the variance and threshold comparison technique of Lowe. Therefore, the rejection should be withdrawn.

Note that Lowe et al., in fact, teach away from using the rolling average technique of Freeman in a diagnostic configuration. Lowe specifically states that a variance is used. Further, Lowe specifically teaches the use of a threshold as opposed to a historical value. For these reasons, the rejections should be withdrawn.

Applicant further notes that the Freeman reference does not show the use of a historical moving average in accordance with the claims. Instead, Lowe describes a, "continuously updated

base level against which the magnitude of instantaneous variations can be measured." Thus, there is no "training mode" as set forth in claims 1 and 28. Further, there is no step of, "retrieving a baseline statistical parameter for a baseline primary element or impulse piping" as set forth in claim 29. For this additional reason, the rejection should be withdrawn.

The addition of the Shanahan reference does nothing to overcome the deficiencies of the Lowe and Freeman references. Shanahan relates to calibrating or characterizing a device. Once the characterizing equation is obtained, subsequent measurements can be run through the equation to improve accuracy. First, Applicant notes that the calibration of Shanahan is not related to a diagnostic technique as set forth in the claims. Further, there is no reason that somehow a simple calibration could be applied to supplement the shortcomings of the Freeman and Lowe references. In actuality, both Freeman and Lowe would likely use some type of a calibration technique for their sensors. The calibration of sensors is required in most instances. Thus, if the teachings of Shanahan are applied to Lowe and/or Freeman, the resulting device is simply the compressor controller of Freeman, or the variance/threshold level diagnostic technique of Lowe in which the calibration technique of Shanahan is provided to improve accuracy of the sensor output. This would lead to more accurate measurement readings, however, it would not provide the claimed diagnostic technique. Shanahan relates to retrieving a stored calibration equation. This is fundamentally different from retrieving stored historical data. For this additional reason, the rejection should be withdrawn.

In view of the above remarks, it is believed that the present application is in condition for allowance. Consideration and favorable action are respectfully requested.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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